

Harnessing the Opulence within: Re-positioning the quest for housing the economically disadvantaged

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Abstract

This paper argues that designing for the economically disadvantaged should perhaps be built on the resilience, resourcefulness, and survival skills of the poor. This would require a repositioning of our perceptions – of both professionals and the poor alike – on many facets of housing the poor. It advocates that architecture for the deprived should be considered a *culture-supportive design* process, in which we attempt to (a) empower the communities; (b) focus on small-scale localized efforts; (c) emphasize incremental improvement of living standards; (d) perhaps, begin to work with substandard living conditions in place of holding contempt for them; and (e) reconsider values attributed to certain materials, technology, and spatial aspects in order to harness their sustainable and functional merits. The paper then illustrates this thesis based on two community designs created by a group of architecture students from the University of Wisconsin – Milwaukee, USA for housing two disadvantaged groups in Sri Lanka: a tea plantation worker community in the central hills and a tsunami-affected community along the southern coast.

Introduction

Rebuilding in the wake of recent natural disasters caused by a tsunami in the South and Southeast Asia and Hurricane Katrina in the US has brought some of the prevailing misconceptions on housing the disadvantaged to the forefront. In the case of Asian tsunami, Davis (2006) observes that the housing solutions given reflect the ideals of the providers (state, donors, designers) rather than the true needs of the displaced and their culture, and thus the lack of understanding of the difference between *house* and *home*. A comparison between the post tsunami and post Katrina disaster management and rebuilding provides another aspect of the issue: Survivors of tsunami were able to put their lives back soon with whatever that was remaining; the unaffected rushed into the recovery; there were no regulatory measures to prevent such impromptu actions. Here it is evident that the poor is in fact resilient and resourceful. The improvisation and the impoverishment, marks of the developing economies, seem to be useful in the fast recovery to normalcy.

This paper sets out to draw attention to these key factors in the debate on housing the economically disadvantaged. It argues that housing the poor should be a culture-supportive design process. In addition, a frequently overlooked aspect is that the poor are in fact very resourceful, resilient, and sometimes incredibly ingenious in surmounting and dealing with the unending problems of life, and that the quest for designing for them should perhaps capitalize on their survival skills. This would demand a repositioning of our perceptions – of both professionals and of the target groups – on many facets of housing the deprived.

Habitat Design and Culture-supportiveness

It has been argued that there is a difference between the notion of *shelter* or *house* and the concept of *home*, and that housing means not simply providing a physical shelter (a quantitative issue) but enabling making homes (a qualitative issue) (Davis, 2006; Dayaratne, 1995). This is where cultural implications in design matter most (Rapoport, 2005). Ensuring lifestyles, belief systems, need for privacy and social interaction, group identity and personal identity, attachment to place, etc are important attributes of the

home-making process. Creating predictable and familiar settings, especially after extreme life-changing scenarios such as tsunamis, is also crucial (Silva, 2001). Opportunities for livelihood and other means of social equity should also be available (Davis, 2006). Meeting these aspirations in the housing design makes it a culture-supportive activity. Some of the specific attributes of this process could include the following.

Empowering the community and the individual

More than the issue of not having a shelter to live, the key issue of homelessness is the sense of incapacity and inadequacy, generated from the lack of opportunities to access social equity – being marginalized within the larger society, poverty, and resultant social diffidence. Having a place to live certainly helps, but empowering the poor is essential. Housing process could afford the poor a greater choice and control over housing themselves and building communities (Turner, 1976). Instead of handing down everything, their capacities – the will and skills – should be strengthened. The poor should be helped to appreciate their own resilience and resourcefulness: Organizing the community, training them in construction, and engaging them throughout the housing process – programming, planning, designing, financing, constructing, and maintaining – is a way to success. Design alone cannot fix the issues of social isolation and lack of community sense. Yet, any physical environmental aspect that is associated with such backwardness can be rectified through design. Empowering the poor thus means giving them hope for the future. Provision of *home* as well as *hope* is a fundamental step for culture-supportive housing design.

Incremental and localized efforts

Empowering the poor, therefore, has to be a more context-specific incremental effort, both due to philosophical and pragmatic reasons. As mentioned above, housing is not an issue of quantity but quality. Communities cannot be created at once and at a large scale. They evolve slowly and organically. Similarly making home is a very personalized effort. Homelessness is a complex, global issue. The resources available for improving the living conditions of the poor are limited and localized. Same housing solution may not be applicable for different contexts – places, groups, times, and situations. Building the will and skill of people is time- and resource-consuming too. In addition, alleviation of poverty and other social injustices needs long-term effort (Dayaratne, 1995). Thus, emphasis should be on small-scale, doable objectives where the change of housing condition is incremental.

Providing Support Structures

Building local communities and fostering incremental development requires laying down physical and social support structures. Based on Habrakan's (1976) idea of support-infill systems, Dayaratne (1995) argues that the community-level public domain (including site planning, infrastructure, public spaces, etc) can be provided by the state, designers, and property developers. This physical and social support structure provides the general framework to be later filled in and adapted by the private domain, the individual dwelling units. The community can participate in planning and maintaining the support structure of the public domain, and the individual can exercise more control in the making of his/her dwelling. The public support structure should be flexible to evolve as the nature and needs of the community evolve. The house unit will also incrementally grow, as the dweller acquires resources and as his/her needs change. Support structures enable hopes, homes, and communities.

Change of perception of standards

Incremental growth also means the acceptance of the substandard housing conditions of the poor, not in any negative terms but in a more appreciative manner. Such imperfect conditions form the starting point, and part of these will remain for sometime until each condition is eventually improved. Thus critically evaluating the substandard aspects, prioritizing what should be fixed first and allocating available resources to that end is important. The poor themselves would determine what could remain and what should be changed. Their view could change the designers' attitude of the dire living conditions. Or perhaps, the poor might need to more optimistically look at their own living conditions as well.

One important aspect of this is the re-thinking of conventional views on aesthetics and functional merits of certain building materials, technology, and spatial attributes. The economically disadvantaged have shown in

numerous occasions how ingenious they could be in identifying the unseen potential of materials for sheltering. The functional value of salvaged materials and imperfect techniques can be improved dramatically if we change our conventional opinion of them. Some materials, such as bamboo, may be abundantly available locally, yet their potential as sustainable low cost building material is not understood due to cultural misperceptions of their aesthetics and use. Innovative ways of using materials and aggressively promoting them is vital. Similarly local know-how might have sometimes been overlooked too, which could effectively be applied in sheltering process.

Creating Homes and Hopes for the Disadvantaged in Sri Lanka

In order to explore the practical applicability of this thesis, a group of architecture students from the University of Wisconsin – Milwaukee, USA created community designs for housing two disadvantaged groups in Sri Lanka: a tea plantation worker community in the central hills and a tsunami-affected fishermen community along the southern coast. The former is a distinctive community of laborers brought from their native South India by the British to farm large-scale coffee and tea plantations beginning from the mid-19th century. Since then they have been living in abject poverty and in isolation from larger society. They continue to live in basic shelter, a compact and crowded single roomed row houses called “line rooms” or “barracks” that are old and dilapidated. The stigma attached to these substandard housing acts as a barrier for the people to integrate into the main socio-political and economic life of the country (PHDT, 2005). Having lost everything they had to the tsunami, the latter group was struggling to rebuild their lives in a new location. Solutions to their homelessness thus needed to address two distinct *hopeless* situations; the social isolation and the stigma attached to the housing of the former, and the effects of displacement of the latter.

In both cases the goal was to reverse the hopeless situation by empowering and facilitating the community to establish a dignified, permanent habitat that will foster their specific cultural traditions, livelihoods, and social integration. The design solution was comprised of two parts: a conceptual community masterplan and a ‘core’ house unit both meant to be ‘support structures’ or catalysts for user-defined expansion. Smaller, essential design moves that enabled change and permitted adaptation by the user were made rather than huge, overarching, utopian visions that designed every last detail for the user. In establishing the support structure for the community, a series of design patterns were generated (based on Alexander *et.al.*, 1971). These patterns dealt with general design elements like paths, nodes, landmarks, and defined edges, including proper infrastructure and public space design, which engendered community as well as an underlying order that allowed for positive growth and adaptation. Furthermore, the master plan infrastructure worked to enable the integration and connection to neighboring communities and ensure the livelihood of the groups.

In the case of the plantation workers, the main commercial area of the community was positioned in a dense cluster directly adjacent to an existing Sinhalese hamlet in order to facilitate the social integration. A path hierarchy worked with the existing hilly terrain and connected the cultural nodes like the commercial center, community meeting room, and a Hindu shrine. Secondary paths connected the primary paths and housing units while the tertiary paths were to be determined by the user. Other patterns for development included nodal public spaces along paths, recreational green spaces, development clusters, and housing variety. The development is phased to expand over time. Most importantly, the ‘line room’ morphology was replaced with single house units in order to change the stigma associated with that particular formal attribute.

In the case of the fishing community, the property made available for their relocation was inland, following state guidelines (Emmanuel, 2005). Thus, reconnecting the group with the sea and other existing communities was crucial. An existing stream was adapted as both a literal and figural connecting lifeline to link the settlement to the sea. A new path system strengthened the existing path connections to reintegrate the new community with the surrounding neighborhoods and the adjacent temple. Nodes established at four corners of the settlement picked up on pre-existing contextual connections; the path system in turn linked the nodes. The nodes serve as imageable public zones for the entire neighborhood. The entrance to the temple, the community meeting center at a primary street intersection, the fish market and boat dock along the stream and the commercial node at the entry from the main road make up these nodes, and, while each may have a different function, they operate together as anchors for a previously lost community.

The design of the house unit serves the individual, and, as in the case of community structure, it provides a 'support system' or a 'core', which offers the basic order and flexibility for growth (Fig. 1). The core elements were selected based on essential spatial needs and were designed with vernacular aesthetics. They were conceived not as holistically designed houses but rather a set of basic parts -- most often a slab on grade with support columns and a roof -- that could grow incrementally with user-defined adaptations. Cultural patterns, ease of construction, affordability, use of local materials, and ecological sustainability were strong factors in the design decisions. In many examples, the core had some level of public/private separation. One student designing for the fishing community placed the public front of the home in a courtyard scheme that connected three or four houses together. Another student designing for the plantation workers created a modular house that has a more permeable, open public front zone and a separate, solid, opaque private zone in the back (Fig.2). In all cases the more permanent elements like the kitchen and outhouse were separated from the public verandah by a permanent wall or placed in a separate structure. Stemming from the verandah, a growth corridor, usually a circulation datum, was designed to guide the expansion of the unit as the individual home owner gathered the necessary resources (Fig. 3,4,5). Another strong theme allowed for functional variances within the ordered structure. For example, the unit could be subdivided to serve as a live/work unit or a large family dwelling with multiple bedrooms and living spaces. In the case of a particular house unit for plantation workers, the sloping terrain was capitalized upon as a way to divide public/private and live/work levels.

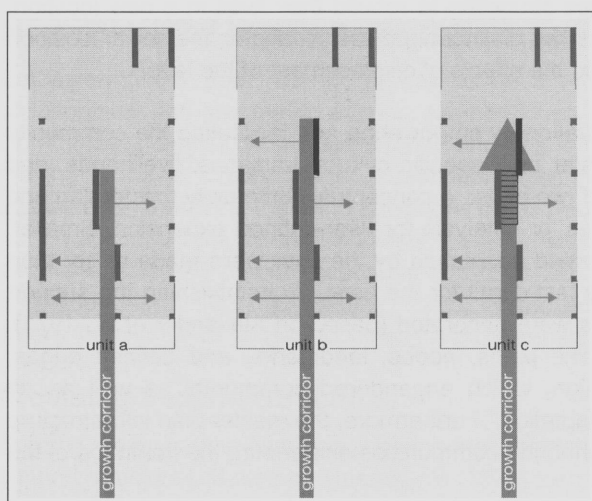


Fig. 1 Core House unit with growth corridor

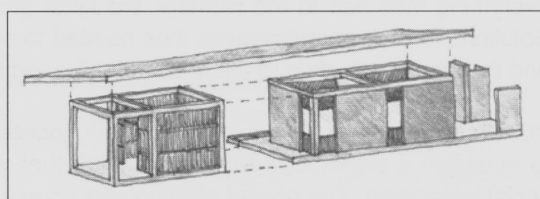


Fig. 2 Public and Private Modules

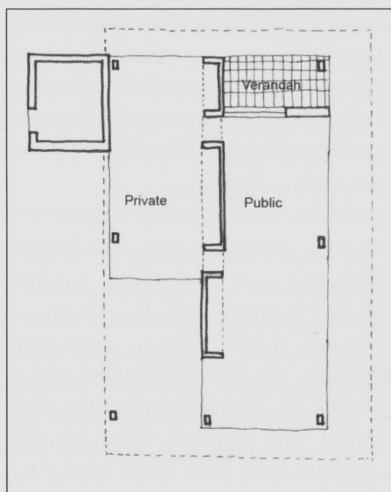


Fig.3 Core Unit

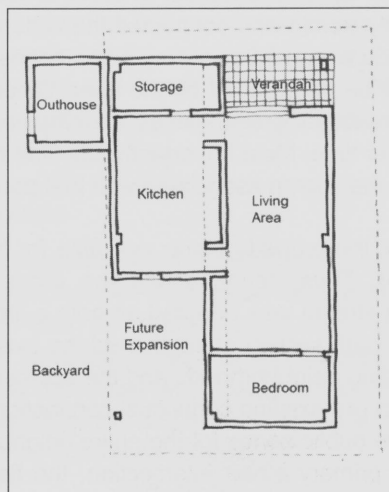


Fig 4 Expansion One

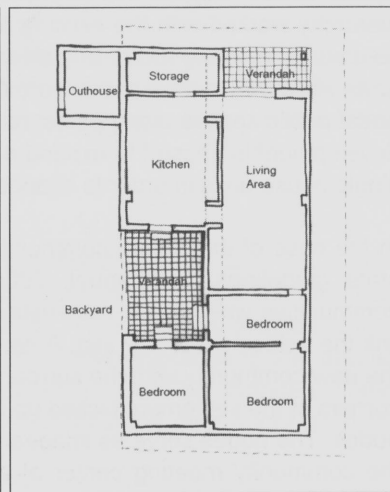


Fig. 5 Expansion Two

Another area of focus with regard to house unit design was its constructability. Students searched beyond the obvious to reveal the potential of some under-utilized materials and construction techniques. Several examples emanated from this approach. First, the use of bamboo as structural columns, trusses and beams was explored and applied by one student in his design of the fish market and boat yard, which is the node along the stream in the tsunami refugee community (Fig. 6). Even though it grows rapidly and is readily available, bamboo is only used for scaffolding during construction in Sri Lanka, partly due to the misperception of its durability, aesthetics, and tectonic concerns. In this application, a simple steel joinery mechanism was developed to improve the connections of bamboo members (Fig.7). It formed a web-like truss that spanned the main aisle of the market as well as two ancillary aisles. The skeletal structure exploited both the compression and tensile strengths inherent in the material. Bamboo was further used for flooring, roofing, and window louvers. This use of bamboo demonstrated the functional, structural, and aesthetic merit of an otherwise thought to be a temporary and low standard material.

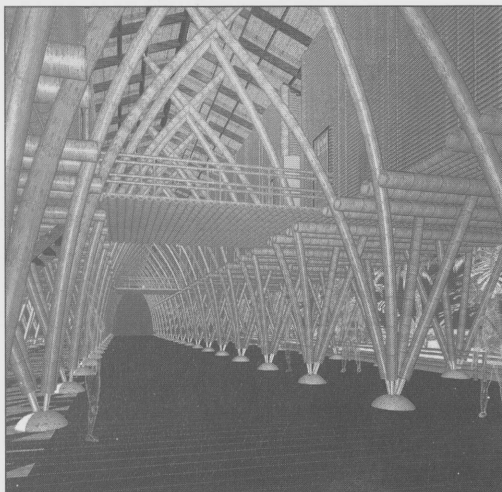


Fig.6 Bamboo as a design element

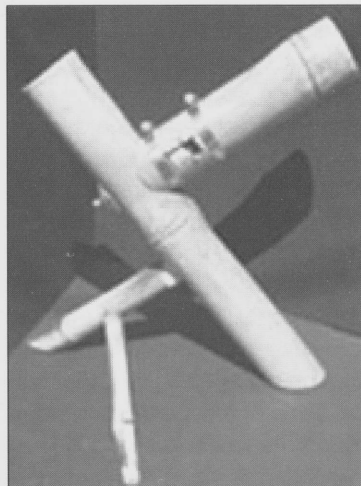


Fig.7 Joining mechanism for Bamboo

A second exploration of material involved the application of rammed-earth construction (Fig.8). Already under study at the Center for Housing, Plantation and Building in Sri Lanka (CHPB, 2004), the application of rammed-earth construction for tsunami refugee housing is ideal because it is readily available, affordable, durable, and less laborious. In this resurrected technology (it has historical uses in Sri Lanka), rammed-earth, mixed with a little cement, was used in between brick columns and in some cases in the central wall that divided public and private use. Another example investigated how Cement Masonry Unit, which seems like a very regular, static building element in its current application, can transcend its usual structural integrity when used in an interlocking block system. This system generates structural stability; blocks can be easily made on site; and thus the construction is sound, swift, and economical. In this exploration, the material was used not only in walls but also in columns, beams and even on the roof (Fig.9). The roof tiles were shaped like a pervious pot that can hold local vegetation and function as a vegetated green roof.

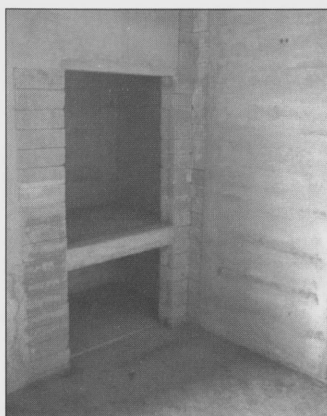


Fig.8 Rammed earth construction



Fig.9 Experimental use of cement masonry blocks and tiles

These materials create a scenario for the user to define and build their own home over time. The personalized, localized recipe for housing is one that stems from utilizing readily available materials and designing the structure to be adaptable, expandable and flexible. It is the small changes that add up over time to produce an effective, efficient way to house the disadvantaged.

Conclusions

The design projects discussed above did not necessarily follow all the arguments presented partly due to their hypothetical nature and partly due to unavoidable logistical restrictions of conducting an academic project. For example, community participation in the design process had to be limited simply to interviewing potential individuals who would move into these houses on their personal requirements. When, where, and how the construction process happens is also beyond the scope of the studio project. Students' understanding of the culture, climate, economy, and building processes is perhaps insufficient too in order to design successful cultural-supportive environments. The two-week period they spent in the island was certainly not adequate for a better acculturation. Time restrictions certainly did not permit developing designs with greater resolution either. Nevertheless, the projects adequately demonstrated the use of the core concepts of the strategy advocated here.

It is indeed necessary to draw attention to two significant aspects related to the core concepts discussed above. Research indicate that these core concepts are not new at all (Manto & Nesgoda, 2007); they recur in many theoretical views on affordable housing appeared during the past six decades; every successful low-income housing project was more or less based on them. It indicates that there seems to be no need to reinvent them repeatedly. Rather what matters is to identify how these concepts could be applied to given situation and to devise the appropriate strategies to implement them. Housing policy and the design process thus have to be context-specific, and suitable solutions can be derived by modifying the core concepts to match the place, people, time, and constraints. For example, introduction of new materials and new ways of using old, familiar materials certainly poses a question whether such novelty is within the scope of the target population in terms of their technological, economic, and psychological capacity. Strategies should be derived, evaluated, and implemented to address these constraints if the introduction of the new material still seems to be a worthwhile practice to adopt. These strategies may include technical training, subsidies, awareness-building, and aggressive promotion. The use of bamboo as a building material as depicted here, for instance, may not be within the current capacity of the target group. Yet it is undertaken in order to point out the range of potential aesthetic and structural use of bamboo and consequently to change the cultural perception attached to the material. If this is to be implemented, there certainly will have to be some institutional support given in terms of technology, finances, training, and attitude-change. Similarly it may have to be a localized incremental process in order to help people gradually feel comfortable in using the material. Perhaps, the first users of the material may not be the poor, but the well-to-do in that society, as the elite more or less seem to bring in the new cultural trends.

Sheltering the displaced and the disadvantaged in the wake of natural and/or man-made disasters provides a paradigm for exploring new approaches to housing. As Rapoport (1983) points out, the change in lives and habitat is abrupt, and the situation is critical and complex. This criticality of the issue requires new thinking for sheltering - temporary to transitional to permanent housing - that supports situationally- and culturally-responsive recovery. The solution, as the main thesis postulated here, has to be more than the provision of a shelter; it is about supporting the creation of both *home* and *hope*. Harnessing the resilience and resourcefulness within the communities and individuals is the key.

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